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UNCLAS OTTAWA 002221

SIPDIS

STATE FOR EB/ESC/ISC (MCMANUS AND ERVITI), WHA/CAN
(RUNNING), OES/EGC (DEROSA)

USDOC FOR ITA/MAC -- OFFICE OF NAFTA

DOE FOR IA (A/S BAILEY, DAS DOBRIANSKY, PUMPHREY, DEUTSCH
AND MARQUIS) AND EERE (DIXON)

DEPT PASS USTR FOR MELLE AND CHANDLER

DEPT PASS INTERIOR FOR INT'L AFFAIRS

DEPT PASS FERC FOR MOSLEY, LONGENECKER, CONNORS, KELLY AND
LEKANG

DEPT PASS USNRC FOR COMMISSIONER MERRIFIELD

E.O. 12958: N/A

TAGS: [ENRG](#) [ETRD](#) [CA](#)

SUBJECT: NATURAL GAS VS. NUCLEAR: CANADIANS STUDY FEASIBILITY
OF REACTORS FUELLING OILSANDS

REF: OTTAWA 1924 AND PREVIOUS

1. SUMMARY: THE CANADIAN ENERGY RESEARCH INSTITUTE (CERI) SAYS THAT, AT NATURAL GAS PRICES OF USD 3.50 / MCF OR MORE, NUCLEAR REACTORS WOULD BE ECONOMICALLY SUPERIOR TO NATURAL GAS IN SUPPLYING THE LARGE AMOUNTS OF STEAM REQUIRED TO EXTRACT CRUDE OIL FROM CANADA'S VAST OILSAND RESOURCES. IF THIS ANALYSIS IS CORRECT, AND IF POLITICAL CONDITIONS ALLOW THE NUCLEAR OPTION, THIS PRESENTS AN OPPORTUNITY TO FREE UP SIGNIFICANT AMOUNTS OF CANADA'S NATURAL GAS FOR U.S. MARKETS, WHILE FURTHER STRENGTHENING THE ECONOMICS OF CANADA'S SYNTHETIC CRUDE OIL. END SUMMARY.

2. THE CERI STUDY IS AVAILABLE AT WEBSITE CERI.ORG. WHILE THE STUDY WAS SPONSORED BY ATOMIC ENERGY OF CANADA LIMITED (AECL), WHICH IS THE OBVIOUS CANDIDATE TO SUPPLY REACTORS IN CANADA, IN POST'S OPINION CERI'S ECONOMIC WORK IS CREDIBLE.

3. WESTERN CANADA'S OILSANDS (REFTEL) CONTAIN PROVEN RESERVES EQUIVALENT TO 175 BILLION BARRELS OF CRUDE OIL, WHICH ARE ALREADY ECONOMICALLY RECOVERABLE AT CURRENT OIL PRICES. EXTRACTING MOST OF THIS OIL DEMANDS LARGE AMOUNTS OF STEAM, WHICH IS INJECTED INTO THE GROUND IN ORDER TO SEPARATE OIL FROM SAND. CURRENTLY, THIS STEAM IS SUPPLIED BY BURNING NATURAL GAS - WHICH IS ABUNDANT IN THE OILSAND REGION, BUT SUSCEPTIBLE TO TIGHTENING SUPPLY-DEMAND CONDITIONS ON A CONTINENTAL BASIS. POSSIBLE RISING NATURAL GAS PRICES ARE A SIGNIFICANT SOURCE OF ECONOMIC RISK FOR OILSAND PRODUCERS.

4. THE OILSANDS ARE CURRENTLY PRODUCING A MILLION BARRELS OF OIL DAILY, AND MULTI-BILLION-DOLLAR EXPANSIONS ARE UNDERWAY, SO THE AMOUNT OF NATURAL GAS CONSUMED IS SIGNIFICANT. ANALYSTS SAY THAT GAS FROM THE PROPOSED MACKENZIE VALLEY NATURAL GAS PIPELINE PROJECT, WHICH IS PROJECTED TO DELIVER ROUGHLY 0.8-1.2 BILLION CUBIC FEET OF GAS PER DAY TO NORTHERN ALBERTA BEGINNING AROUND 2009-2010, IS LIKELY TO BE ENTIRELY ABSORBED BY OILSANDS DEMAND.

5. THE CERI STUDY COMPARES CURRENT GAS-FIRED STEAM GENERATION TECHNOLOGY WITH THE ACR-700, THE COMING GENERATION OF AECL'S "CANDU" LIGHT WATER REACTORS. THESE REACTORS BURN NATURAL-GRADE URANIUM, OF WHICH CANADA IS THE WORLD'S LARGEST PRODUCER. AECL HAS UP-TO-DATE EXPERIENCE WITH REACTOR CONSTRUCTION; IT HAS CURRENT OR RECENT CONSTRUCTION PROJECTS IN CHINA, KOREA AND ROMANIA, AND COMPLETED CANADA'S NEWEST NUCLEAR POWER PLANT AT DARLINGTON, ONTARIO IN THE EARLY 1990'S. AECL ALSO CLAIMS A GOOD RECORD OF COMPLETING REACTORS ON SCHEDULE AND ON BUDGET.

6. ACCORDING TO THE CERI STUDY, AT GAS COSTS OF USD 3.50 / MCF, TOTAL COSTS FOR THE TWO OPTIONS ARE SIMILAR, WITH NUCLEAR HAVING AN EDGE (\$8.61 VS. \$9.42 PER TONNE OF STEAM). HOWEVER, THE STUDY STRESSES THAT BECAUSE FUEL ACCOUNTS FOR ABOUT 90 PERCENT OF THE COST OF THE GAS OPTION, THIS OPTION IS MUCH MORE EXPOSED TO CHANGES IN FUEL COST. MOREOVER, THE GAS OPTION IS ALSO EXPOSED TO POSSIBLE COSTS RELATED TO ITS CARBON DIOXIDE EMISSIONS, A FACTOR WHICH DOES NOT AFFECT THE NUCLEAR OPTION.

7. COMMENT: THE FINDING THAT NUCLEAR IS AN ECONOMICALLY COMPETITIVE SOURCE OF HEAT FOR OILSANDS PRODUCTION IS NO SURPRISE. CANDU REACTORS HAVE GOOD SERVICE RECORDS, AECL HAS RECENT CONSTRUCTION EXPERIENCE, URANIUM IS ABUNDANT, AND CANADA'S NUCLEAR POWER REACTORS HAVE PROVIDED COMPETITIVE BASE-LOAD ELECTRICITY FOR DECADES. ALL THE QUESTIONS ARE ON THE POLITICAL SIDE. WESTERN CANADIANS CURRENTLY HAVE VIRTUALLY NO EXPOSURE TO NUCLEAR INDUSTRIES OTHER THAN

URANIUM MINES, WHEREAS THEY KNOW AND TRUST FOSSIL FUELS.

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